

## **Digital map structure for an Equitable and Sustainable road use**

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The main goal of this research is the development of a dynamic map and modelling structure to support the implementation of equitable and sustainable advanced traffic management systems. The first tangible objective is to develop a dynamic map structure which will assimilate a library of forecasting traffic models and associated externalities. A key feature of this platform is the recognition that these impacts are spatiotemporally dynamic due to the heterogeneity of activity patterns of each link. Accordingly, dynamic weights on the full range of distributional effects for each impact will be assigned in order to develop a unique link-based eco-indicator. The second objective is to enhance the potential of new sources of traffic data to improve the networks efficiency. This will be done creating new methods for managing different sources of real-time information to determine the energetic and environmental network performance. Innovative functional relationships between microscale speed patterns based on floating car data and different levels of macroscopic traffic performance scenarios will be developed. Finally, it is intended to deliver an integrated optimization platform for determining efficient traffic management measures. Based on optimization algorithms and artificial intelligence techniques, advanced traffic management strategies ATMS (e.g.. optimal flow distributions, smart road pricing systems, optimum link speeds, eco-routing information) will be evaluated.

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